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Metal Removal (Pb And Fe) Efficacy Of Multi-Metal Tolerant Bacteria *Bacillus Subtilis* A1-1

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Industrial developments and human activities are the consequence of heavy metal entering in to the environment and become threaten to ecosystem. A bacterial strain from metal polluted mining soil has been isolated and metal tolerance (Cu, Cr, Pb, Zn, Fe, Mn and Mg) effect was screened by growth inhibition method. Different concentrations of each metals (100 µg/ml to 1200 µg/ml) were used for primary screening and the study revealed that, the bacterial strain A1-1 showed highly tolerant (above 1000mg/l) to Fe and Pb than other metals. The order of metal tolerance was Fe>Pb>Mn>Mg>Cu>Cr>Zn. Tolerant bacterial isolate was identified as *B.subtilis* A1-1 [GenBank Accession Number: KR819401] by 16S rRNA sequencing. The removals of metals were studied by biosorption method under controlled conditions in laboratory resulted the bacteria exhibit 86.45% and 90.74% remediation to Pb and Fe respectively. These results suggest that metal tolerant (Pb & Fe) bacteria *B.subtilis* A1-1 could be employed for the potential use of detoxification of metals in multi metal contaminated environment.

Keywords: Heavy metal, *B.subtilis*, Biosorption, 16S rRNA sequencing,